



Missouri
Department of
Natural Resources

Use Attainability Analysis

for

WBID 3097 Ditch #6

Submitted by
MEC/ERC

To

Missouri Department of Natural Resources
Water Protection Program

On

October 24, 2008

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet A – Water Body Identification

I. Water Body Information (for water body being surveyed)

Water Body Name (from USGS 7.5' quad):	Ditch # 6
Missouri Water Body Identification (WBID) Number:	3097
8-digit HUC:	0820204 Little River Ditches
County(ies), Listed Upstream to Downstream:	Stoddard, New Madrid
Upstream Legal Description (from Table H):	26, 26N, 11E
Downstream Legal Description (from Table H):	16, 22N, 11E
Number of sites evaluated:	13
List all site numbers, <u>consecutively upstream to downstream</u> :	See all data sheet B's for locations
Include a Site Location Map(s). The map must include all requirements detailed in the <i>Missouri Recreational Use Attainability Analyses: Water Body Survey and Assessment Protocol</i> (Section IV.D.8.a).	

II. Facility Information (list all permitted discharges to this water body segment)

Facility Name(s) and Permit Number(s):
Essex WWTF MO0089273
Essex Power Plant MO0123447

III. UAA Surveyor (please **PRINT** legibly)

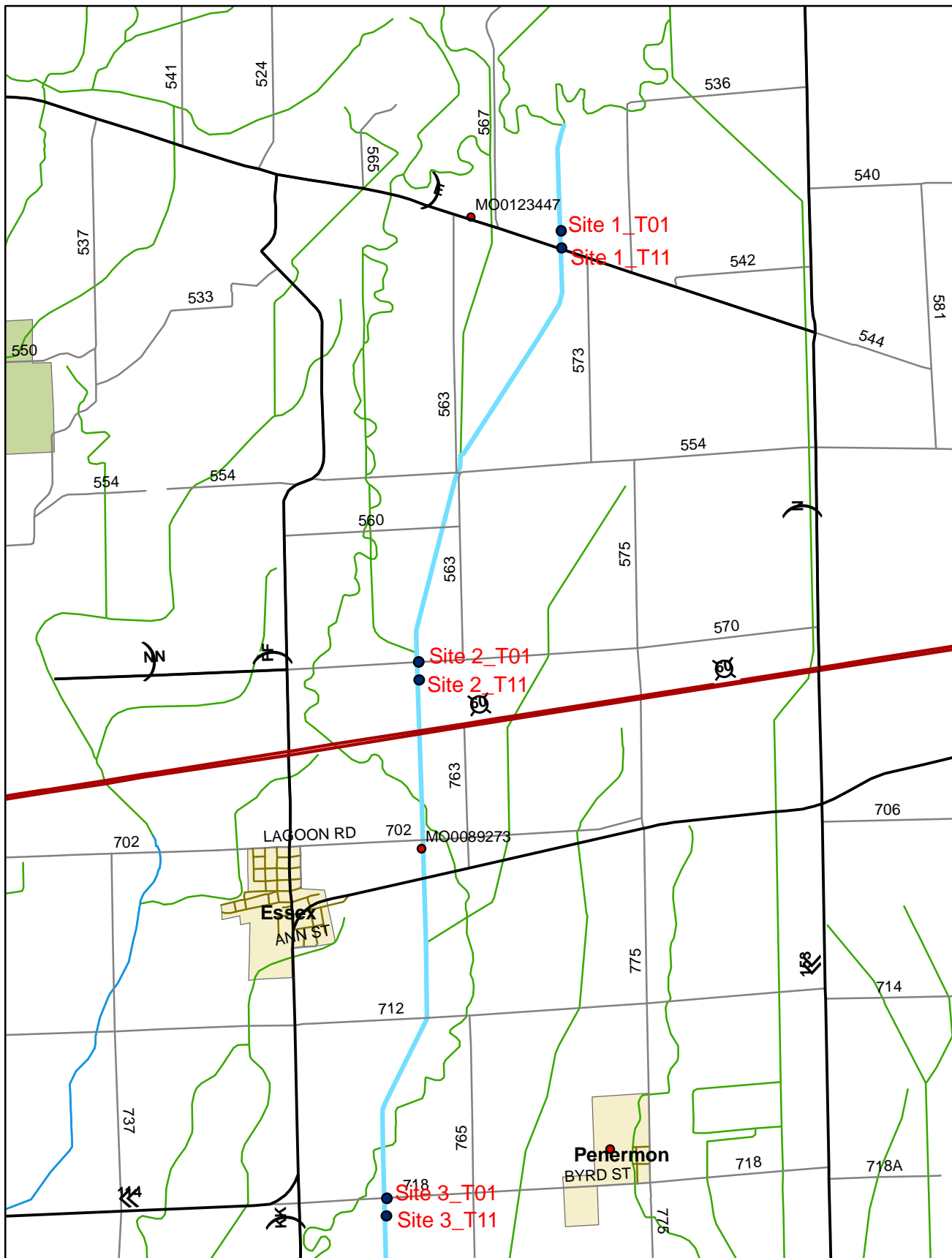
Name of Surveyor: Abigail L. Lynn	Telephone Number: (573) 634-7078
Organization/Employer: ERC	

Please verify that you have completed all sections of all data sheets, checked all applicable boxes, provided a map (that includes all requirements listed in the *Missouri Recreational Use Attainability Analyses: Water Body Survey and Assessment Protocol*) and that this form is complete.

Signed: Abigail L. Lynn Date: 10/8/08

WBID # 3097 - Ditch 6

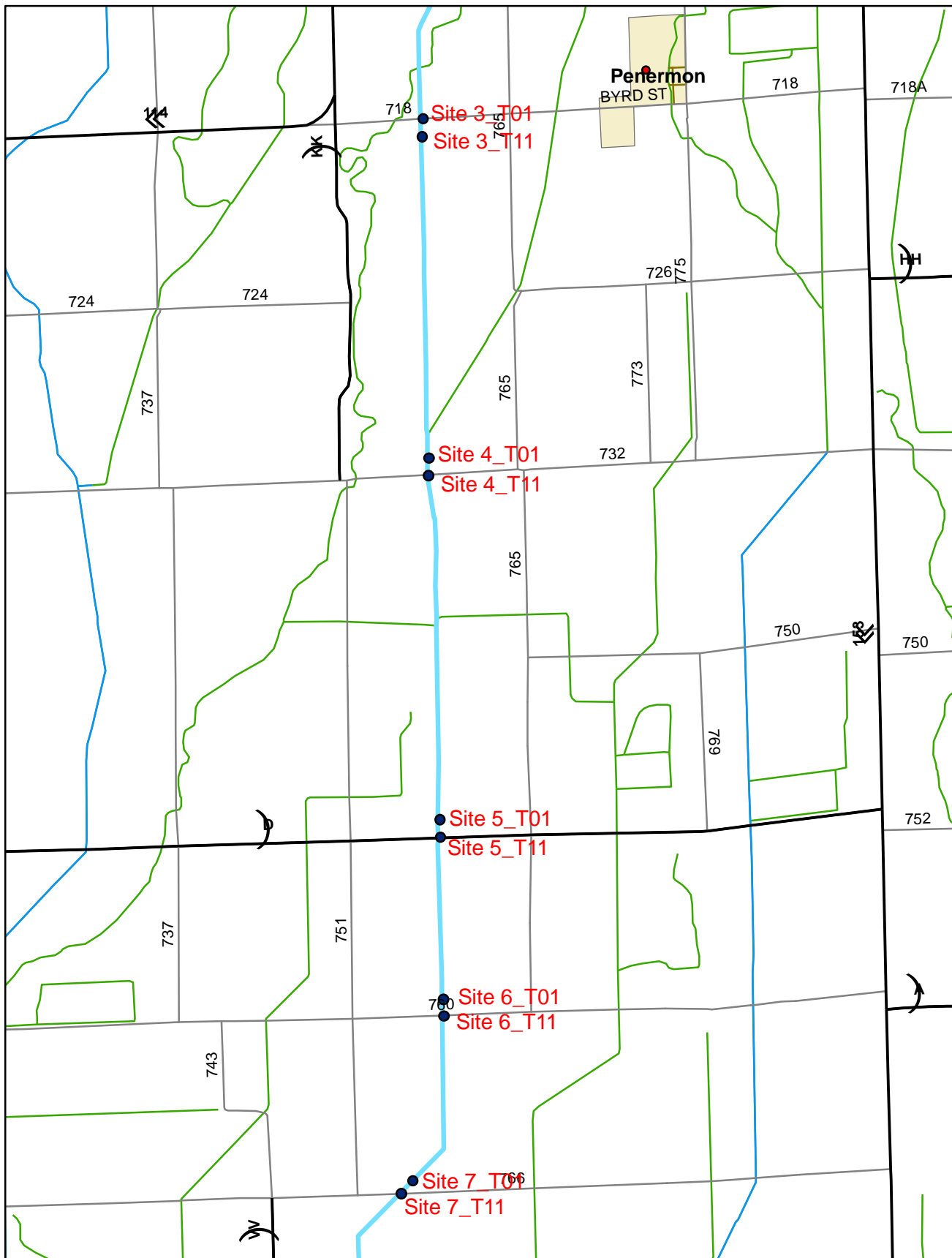
Stoddard and New Madrid Counties



0 1,250 2,500 5,000 Meters

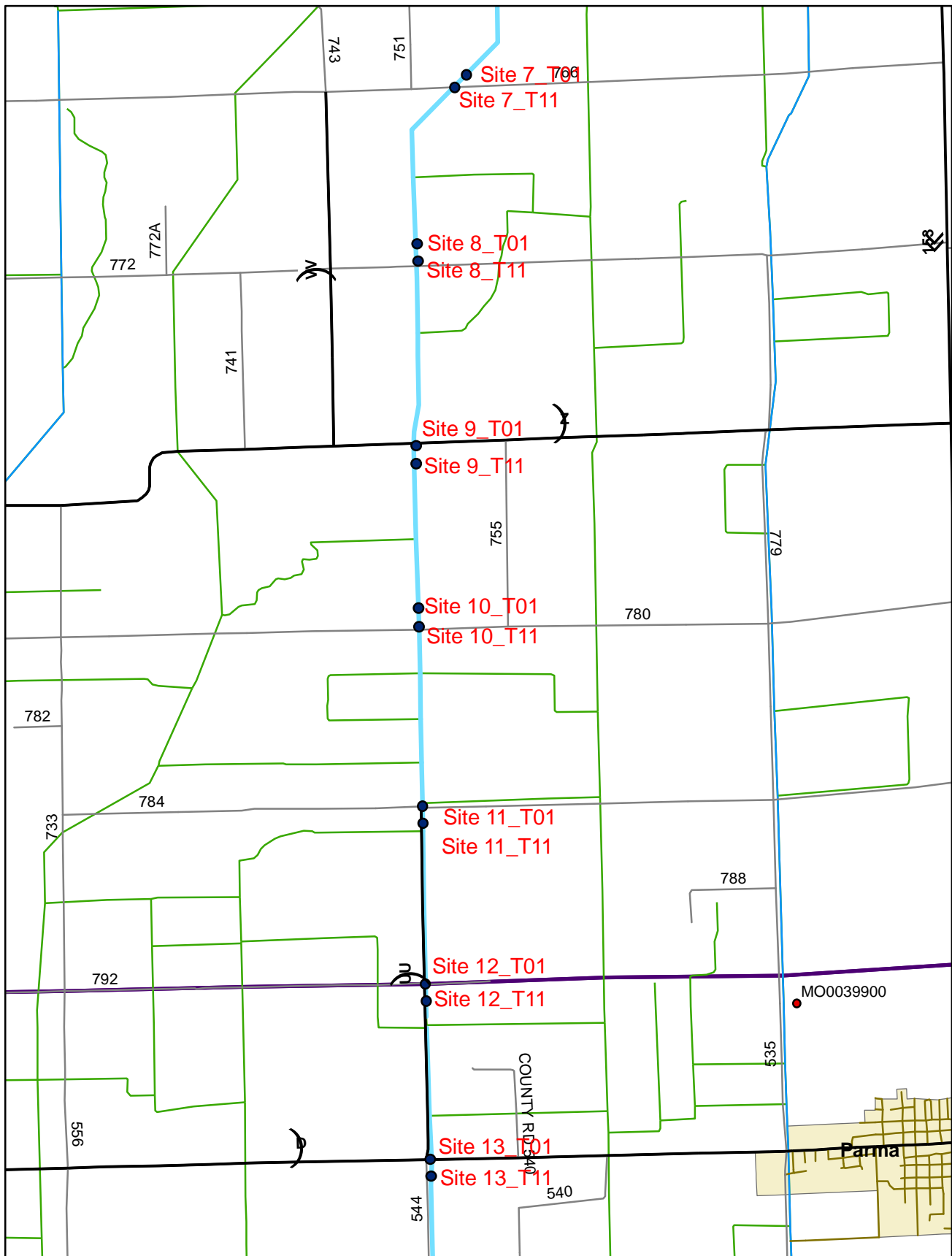
WBID # 3097 - Ditch 6

Stoddard and New Madrid Counties



WBID # 3097 - Ditch 6

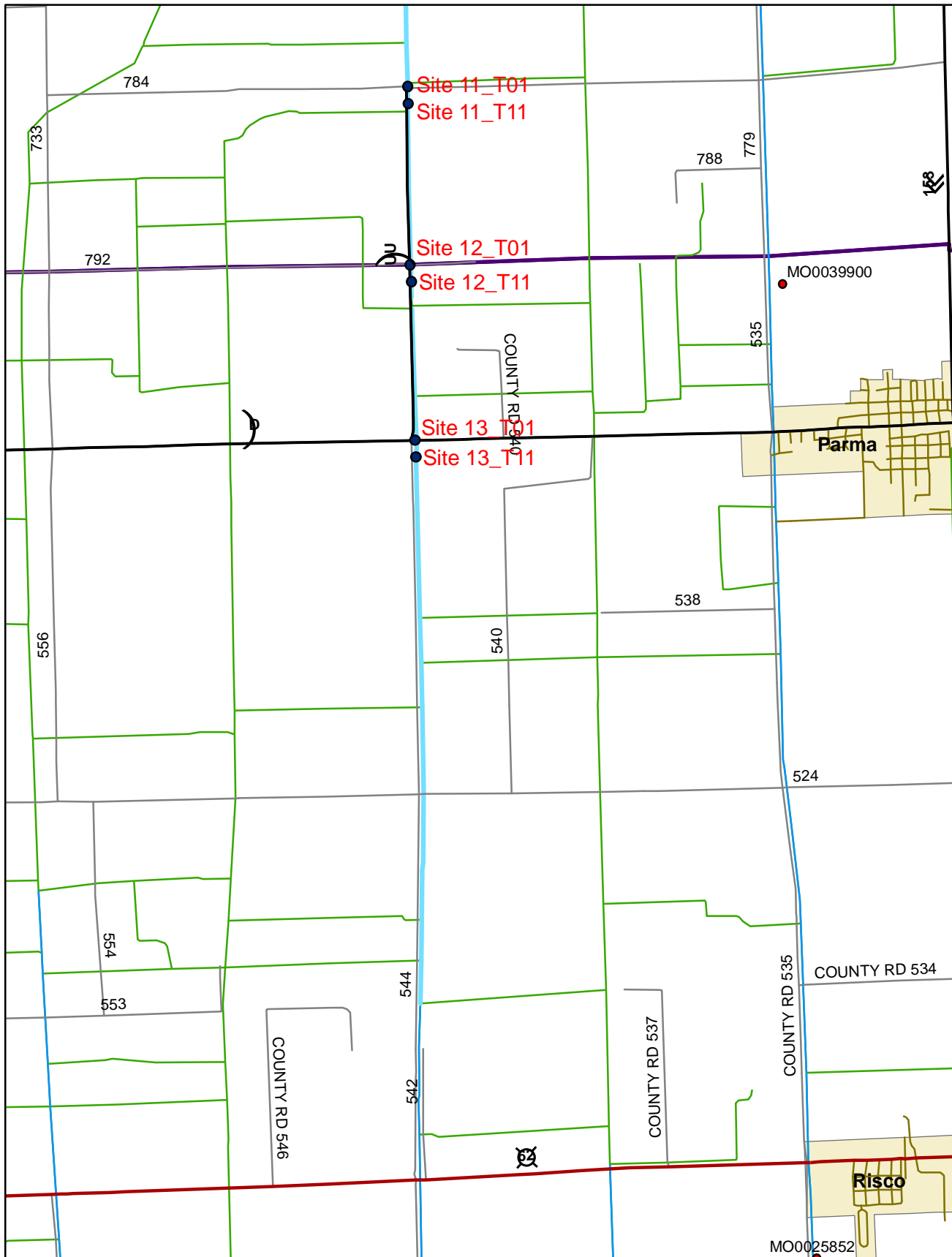
Stoddard and New Madrid Counties



0 1,250 2,500 5,000 Meters

WBID # 3097 - Ditch 6

Stoddard and New Madrid Counties



0 1,250 2,500 5,000 Meters

Weather Conditions

Weather conditions ten days previous to stream assessment are listed in the tables below. The date(s) that the stream was assessed are shaded.

Data from the WeatherUnderground.com
Malden, MO

Date	Precipitation (Inches)	Min. Temp (°F)	Max. Temp (°F)	Avg. Temp (°F)
9/22/2008	-	-	-	-
9/23/2008	0.00	70.0	90.0	82.0
9/24/2008	0.00	64.0	88.0	75.0
9/25/2008	0.00	61.0	88.0	74.0
9/26/2008	0.00	57.0	84.0	71.0
9/27/2008	0.00	57.0	86.0	70.0
9/28/2008	0.00	57.0	88.0	71.0
9/29/2008	0.01	59.0	86.0	73.0
9/30/2008	0.00	61.0	75.0	69.0
10/1/2008	0.00	50.0	77.0	63.0
10/2/2008	0.00	48.0	70.0	59.0
10/3/2008	0.00	45.0	75.0	60.0
10/4/2008	0.00	46.0	81.0	62.0
10/5/2008	0.00	50.0	86.0	67.0
10/6/2008	0.00	55.0	86.0	70.0
10/7/2008	0.59	64.0	79.0	72.0
10/8/2008	0.00	55.0	73.0	66.0

WBID # 3097Site # 1**Field Data Sheets for Recreational Use Stream Surveys****Data Sheet B – Site Characterization** (Page 1 of 3)

(must be completed for each site)

Date & Time: <u>10/8/08 16:11</u>	Location Description (e.g., road crossing): <u>upstream at Hwy E</u>
Stream Name: <u>Ditch #6</u>	
Current Weather Conditions: <u>66° clear</u>	Facility Name(s): <u>Essex WWT</u> <u>Essex Power Plant</u>
Weather Conditions for Past 10 days: <u>attached</u>	Permit Number(s): <u>MO 0089273</u> <u>MO 0123447</u>
Official Drought Conditions at time of this survey (search DNR home page for "drought"): No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Location:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)					
Site 01	Easting (UTM X): <u>1650247349</u>	Northing (UTM Y): <u>4083787</u>	Horizontal Accuracy: (EPE / FOM / PDOP)	<u>7</u>	Meters
Site 11	Easting (UTM X): <u>1650247336</u>	Northing (UTM Y): <u>4083635</u>	Horizontal Accuracy: (EPE / FOM / PDOP)	<u>5</u>	Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

Uses Observed*: (Uses actually observed at the time of survey.)

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use Data Sheet D- Recreational Use Interview when conducting interviews.)				

Stream Name & WBID # Ditch #C 3097Date of Survey 10/8/08Site # 1**Field Data Sheets for Recreational Use Stream Surveys****Data Sheet B – Site Characterization** (Page 2 of 3)**Surrounding Conditions*:** (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input checked="" type="checkbox"/> Steep slopes	<input type="checkbox"/> Other:
Comments: <u>Farm fields</u>				

Evidence of Human Use*: (Attach photos and reference in "Photos" section.)

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV / ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock Watering
<input checked="" type="checkbox"/> None of the above	Comments / Other:			

Substrate*: (These values should add up to 100%.)

% Cobble	% Gravel	% Sand	<u>20</u>	% Silt	<u>80</u> % Mud/Clay	% Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

<u>100% emergent plants</u>

Water Characteristics*: (Mark all that apply.)

Odor:	<input checked="" type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input type="checkbox"/> Other:
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input type="checkbox"/> None	<input type="checkbox"/> Other:

*This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions that need further analysis or that affect another use.

Stream Name & WBID # Ditch #6 3097Date of Survey 10/8/08Site # 1**Field Data Sheets for Recreational Use Stream Surveys****Data Sheet B – Site Characterization** (Page 3 of 3)**Additional Stream Morphology:** (Record isolated pools or other features identified during the survey that may support recreational uses.)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

Comments: (Please record any additional comments here.)

- None Dry - ditch bed was muddy & smelled like sewage

Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.

Printed Names of Personnel Collecting Data: Abigail Lynn & Travis HowellSurveyor's Signature: Abigail Lynn Date of Survey: 10/8/08Organization: ERC Position: Field Manager

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: <u>Ditch # 6</u> Waterbody ID: <u>3097</u> Site #: <u>1</u>														Dissolved Oxygen								
Estimated Channel Incision: <u>Dry</u> (m) (height between low bank width and water)														Date: <u>10/8/2008</u> Time: <u>16:11</u>								
GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (<u>EPE</u> / PDOP / FOM)														Dissolved Oxygen: <u>Dry</u> (mg/L)								
01 UTM X <u>16S0247545</u> UTM Y: <u>4083787</u> +/- <u>7</u> (meters)														Dissolved Oxygen: <u>Dry</u> (% sat)								
11 UTM X <u>16S0247536</u> UTM Y: <u>4083630</u> +/- <u>5</u> (meters)														Specific Cond: <u>Dry</u> (µS/cm)								
Average Stream Width: <u>Dry</u> (meters) Length of Survey Segment: <u>150</u> (meters)														Water Temperature: <u>Dry</u> (°C)								
(To determine Length of Reach) (20x average stream width)																						
Field Staff: <u>Abby Lynn and Travis Howell (AL & TH)</u>																						
Transect Cross-Section																						
01		02		03		04		05		06		07		08		09		10		11		
Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1	0		0		0		0		0		0		0		0		0		0		0	
2	0		0		0		0		0		0		0		0		0		0		0	
3	0		0		0		0		0		0		0		0		0		0		0	
4	0		0		0		0		0		0		0		0		0		0		0	
5	0		0		0		0		0		0		0		0		0		0		0	
6	0		0		0		0		0		0		0		0		0		0		0	
7	0		0		0		0		0		0		0		0		0		0		0	
8	0		0		0		0		0		0		0		0		0		0		0	
9	0		0		0		0		0		0		0		0		0		0		0	
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Dry		Dry		Dry		Dry		Dry		Dry		Dry		Dry		Dry		Dry		Dry		

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.1 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Surveyor's Signature: Abigail L. Lynn Date: 10/8/2008

WBID # 3097Site # 2**Field Data Sheets for Recreational Use Stream Surveys****Data Sheet B – Site Characterization** (Page 1 of 3)

(must be completed for each site)

Date & Time: <u>10/8/08 15:30</u>	Location Description (e.g., road crossing): <u>Downstream off Co Rd 570</u>
Stream Name: <u>Ditch # 6</u>	
Current Weather Conditions: <u>65° clear</u>	Facility Name(s): <u>Essex WWTF</u> <u>Essex Power Plant</u>
Weather Conditions for Past 10 days: <u>attached</u>	Permit Number(s): <u>MD0089273</u> <u>MD0123447</u>
Official Drought Conditions at time of this survey (search DNR home page for “drought”): No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Location:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)					
Site 01	Easting (UTM X): <u>1650246010</u>	Northing (UTM Y): <u>4079978</u>	Horizontal Accuracy: (EPE / FOM / PDOP)	<u>5</u>	Meters
Site 11	Easting (UTM X): <u>1650246005</u>	Northing (UTM Y): <u>4079814</u>	Horizontal Accuracy: (EPE / FOM / PDOP)	<u>6</u>	Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

Uses Observed*: (Uses actually observed at the time of survey.)

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use Data Sheet D- Recreational Use Interview when conducting interviews.)				

Stream Name & WBID # Ditch #6 3097Date of Survey 10/8/08Site # 2**Field Data Sheets for Recreational Use Stream Surveys****Data Sheet B – Site Characterization** (Page 2 of 3)**Surrounding Conditions*:** (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input checked="" type="checkbox"/> Steep slopes	<input type="checkbox"/> Other:
Comments: <u>Farm Fields</u>				

Evidence of Human Use*: (Attach photos and reference in "Photos" section.)

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV / ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock Watering
<input checked="" type="checkbox"/> None of the above	Comments / Other:			

Substrate*: (These values should add up to 100%.)

% Cobble	% Gravel	% Sand	<u>10</u> % Silt	<u>90</u> % Mud/Clay	% Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

<u>20-30% algae mats on</u>

Water Characteristics*: (Mark all that apply.)

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input type="checkbox"/> Clear	<input checked="" type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input type="checkbox"/> Other:
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input checked="" type="checkbox"/> Foam	<input type="checkbox"/> None	<input type="checkbox"/> Other:

*This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions that need further analysis or that affect another use.

Stream Name & WBID # Ditch # 6 3097Date of Survey 10/8/08Site # 2**Field Data Sheets for Recreational Use Stream Surveys****Data Sheet B – Site Characterization** (Page 3 of 3)**Additional Stream Morphology:** (Record isolated pools or other features identified during the survey that may support recreational uses.)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

Comments: (Please record any additional comments here.)

- Ditch is very hard to walk in mud is knee deep

Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.

Printed Names of Personnel Collecting Data: Abigail Lynn & Travis HowellSurveyor's Signature: Abigail Lynn Date of Survey: 10/8/08Organization: ERC Position: Field Manager

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: <u>Ditch # 6</u> Waterbody ID: <u>3097</u> Site #: <u>2</u>																Dissolved Oxygen						
Estimated Channel Incision: <u>0</u> (m) (height between low bank width and water)																Date: <u>10/8/2008</u> Time: <u>15:30</u>						
GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (<u>EPE</u> / PDOP / FOM)																Dissolved Oxygen: <u>14.02</u> (mg/L)						
01 UTM X <u>16S0246010</u> UTM Y: <u>4079978</u> +/- <u>5</u> (meters)																Dissolved Oxygen: <u>175.3</u> (% sat)						
11 UTM X <u>16S0246005</u> UTM Y: <u>4079814</u> +/- <u>6</u> (meters)																Specific Cond: <u>112</u> (µS/cm)						
Average Stream Width: <u>4.7</u> (meters) Length of Survey Segment: <u>150</u> (meters)																Water Temperature: <u>26.1</u> (°C)						
(To determine Length of Reach) (20x average stream width)																						
Field Staff: <u>Abby Lynn and Travis Howell (AL & TH)</u>																						
Transect Cross-Section																						
01		02		03		04		05		06		07		08		09		10		11		
Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1	0.43	0.05	0.18	0.04	0.68	0.09	0.55	0.08	0.46	0.04	0.41	0.02	0.39	0.04	0.49	0.1	0.48	0.04	0.45	0.04	0.5	3.09
2	0.86	0.07	0.36	0.06	1.36	0.1	1.1	0.11	0.92	0.07	0.82	0.04	0.78	0.07	0.98	0.09	0.96	0.08	0.9	0.13	1	0.09
3	1.29	0.09	0.54	0.1	2.04	0.05	1.65	0.13	1.38	0.09	1.23	0.06	1.17	0.05	1.47	0.08	1.44	0.08	1.35	0.19	1.5	0.1
4	1.72	0.1	0.72	0.1	2.72	0.05	2.2	0.15	1.84	0.11	1.64	0.09	1.56	0.05	1.96	0.08	1.92	0.09	1.8	0.1	2	0.07
5	2.15	0.07	0.9	0.13	3.4	0.06	2.75	0.17	2.3	0.1	2.05	0.13	1.95	0.06	2.45	0.07	2.4	0.06	2.25	0.08	2.5	0.07
6	2.58	0.06	1.08	0.15	4.08	0.11	3.3	0.18	2.76	0.12	2.46	0.15	2.34	0.14	2.94	0.08	2.88	0.07	2.7	0.07	3	0.06
7	3.01	0.09	1.26	0.15	4.76	0.12	3.85	0.2	3.22	0.06	2.87	0.08	2.73	0.08	3.43	0.07	3.36	0.05	3.15	0.06	3.5	0.07
8	3.44	0.08	1.44	0.17	5.44	0.13	4.4	0.12	3.68	0.04	3.28	0.04	3.12	0.03	3.92	0.05	3.84	0.03	3.6	0.03	4	0.04
9	3.87	0.05	1.62	0.1	6.12	0.09	4.95	0.11	4.14	0.02	3.69	0.02	3.51	0.03	4.41	0.03	4.32	0.03	4.05	0.03	4.5	0.03
Right Bank	4.3	0	1.8	0	6.8	0	5.5	0	4.6	0	4.1	0	3.9	0	4.9	0	4.8	0	4.5	0	5	0
Feature Type	Run		Run		Run		Run		Run		Run		Run		Run		Run		Run		Run	

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.1 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Surveyor's Signature: Abigail L. Lynn Date: 10/8/2008

WBID # 3097Site # 3**Field Data Sheets for Recreational Use Stream Surveys****Data Sheet B – Site Characterization** (Page 1 of 3)

(must be completed for each site)

Date & Time: <u>10/8/08 14:57</u>	Location Description (e.g., road crossing): <u>Downstream off Rd 718</u>
Stream Name: <u>Ditch #6</u>	
Current Weather Conditions: <u>65° clear</u>	Facility Name(s): <u>Essex WWTP</u> <u>Essex Power Plant</u>
Weather Conditions for Past 10 days: <u>attached</u>	Permit Number(s): <u>MO0089273</u> <u>MO0123447</u>
Official Drought Conditions at time of this survey (search DNR home page for "drought"): No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Location:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)					
Site 01	Easting (UTM X): <u>165024549</u>	Northing (UTM Y): <u>4075196</u>	Horizontal Accuracy: (EPE / FOM / PDOP)	<u>6</u>	Meters
Site 11	Easting (UTM X): <u>1650245403</u>	Northing (UTM Y): <u>4074997</u>	Horizontal Accuracy: (EPE / FOM / PDOP)	<u>8</u>	Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
	<u>Deleted last pic of 3097 site 3 should have 2 more</u>				
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

Uses Observed*: (Uses actually observed at the time of survey.)

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use Data Sheet D- Recreational Use Interview when conducting interviews.)				

Stream Name & WBID # Ditch #6 3097Date of Survey 10/8/08Site # 3**Field Data Sheets for Recreational Use Stream Surveys****Data Sheet B – Site Characterization** (Page 2 of 3)**Surrounding Conditions*:** (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input checked="" type="checkbox"/> Steep slopes	<input type="checkbox"/> Other:
Comments: <u>Farm Fields</u>				

Evidence of Human Use*: (Attach photos and reference in "Photos" section.)

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV / ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock Watering
<input checked="" type="checkbox"/> None of the above	Comments / Other:			

Substrate*: (These values should add up to 100%.)

% Cobble	% Gravel	<u>20</u> % Sand	<u>10</u> % Silt	<u>70</u> % Mud/Clay	% Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

<u>None - dead plant material on bottom</u>

Water Characteristics*: (Mark all that apply.)

Odor:	<input checked="" type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input type="checkbox"/> Clear	<input checked="" type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input type="checkbox"/> Other:
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input checked="" type="checkbox"/> Foam	<input type="checkbox"/> None	<input type="checkbox"/> Other:

*This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions that need further analysis or that affect another use.

Stream Name & WBID # Ditch #6 3097Date of Survey 10/8/08Site # 3**Field Data Sheets for Recreational Use Stream Surveys****Data Sheet B – Site Characterization** (Page 3 of 3)**Additional Stream Morphology:** (Record isolated pools or other features identified during the survey that may support recreational uses.)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

Comments: (Please record any additional comments here.)

- lots of dead fish 1-3 inches long
- looks like stream bed had been dry but rose recently
- lots of debris (trash) in stream - tires, crates, pans, etc.

Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.Printed Names of Personnel Collecting Data: Abigail Lynn & Travis HowellSurveyor's Signature: Abigail Lynn Date of Survey: 10/8/08Organization: ERC Position: Field Manager

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: <u>Ditch # 6</u> Waterbody ID: <u>3097</u> Site #: <u>3</u> Estimated Channel Incision: <u>0.2</u> (m) (height between low bank width and water) GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (<u>EPE</u> / PDOP / FOM) 01 UTM X <u>16S0245419</u> UTM Y: <u>4075156</u> +/- <u>6</u> (meters) 11 UTM X <u>16S0245403</u> UTM Y: <u>4074997</u> +/- <u>8</u> (meters) Average Stream Width: <u>4.5</u> (meters) Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>Abby Lynn and Travis Howell (AL & TH)</u>																Dissolved Oxygen					
																Date: <u>10/9/2008</u> Time: <u>14:57</u>					
																Dissolved Oxygen: <u>10.77</u> (mg/L)					
																Dissolved Oxygen: <u>129.6</u> (% sat)					
																Specific Cond: <u>433.5</u> (µS/cm)					
																Water Temperature: <u>24.8</u> (°C)					

Transect Cross-Section																							
01		02		03		04		05		06		07		08		09		10		11			
Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)		
<div style="display: flex; justify-content: space-between;"> Station Left Bank </div>																							
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
1	0.39	0.15	0.48	0.27	0.38	0.07	0.33	0.04	0.47	0.07	0.46	0.07	0.45	0.04	0.45	0.04	0.48	0.06	0.49	0.07	0.58	0.06	
2	0.78	0.31	0.96	0.39	0.76	0.11	0.66	0.07	0.94	0.12	0.92	0.15	0.9	0.07	0.9	0.04	0.96	0.1	0.98	0.14	1.16	0.12	
3	1.17	0.31	1.44	0.38	1.14	0.13	0.99	0.12	1.41	0.13	1.38	0.22	1.35	0.1	1.35	0.04	1.44	0.1	1.47	0.18	1.74	0.15	
4	1.56	0.29	1.92	0.4	1.52	0.12	1.32	0.18	1.88	0.1	1.84	0.19	1.8	0.08	1.8	0.05	1.92	0.08	1.96	0.2	2.32	0.15	
5	1.95	0.17	2.4	0.37	1.9	0.12	1.65	0.2	2.35	0.05	2.3	0.18	2.25	0.05	2.25	0.03	2.4	0.05	2.45	0.19	2.9	0.15	
6	2.34	0.14	2.88	0.33	2.28	0.09	1.98	0.2	2.82	0.07	2.76	0.2	2.7	0.05	2.7	0.06	2.88	0.13	2.94	0.14	3.48	0.15	
7	2.73	0.08	3.36	0.27	2.66	0.09	2.31	0.19	3.29	0.1	3.22	0.15	3.15	0.03	3.15	0.06	3.36	0.12	3.43	0.14	4.06	0.16	
8	3.12	0.05	3.84	0.16	3.04	0.08	2.64	0.15	3.76	0.07	3.68	0.08	3.6	0.02	3.6	0.05	3.84	0.07	3.92	0.109	4.64	0.14	
9	3.51	0.04	4.32	0.07	3.42	0.06	2.97	0.07	4.23	0.08	4.14	0.04	4.05	0.02	4.05	0.02	4.32	0.07	4.41	0.06	5.22	0.08	
Right Bank		3.9	0	4.8	0	3.8	0	3.3	0	4.7	0	4.6	0	4.5	0	4.5	0	4.8	0	4.9	0	5.8	0
Feature Type		Run		Run		Run		Run		Run		Run		Run		Run		Run		Run		Run	

(riffle, run, or pool)

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.1 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Surveyor's Signature: Abigail L. Lynn Date: 10/8/2008

WBID # 3097
 Site # 4

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (Page 1 of 3) (must be completed for each site)

Date & Time: <u>10/8/08 14:37</u>	Location Description (e.g., road crossing): <u>Upstream at Co Rd 732</u>
Stream Name: <u>Ditch #6</u>	
Current Weather Conditions: <u>67° clear</u>	Facility Name(s): <u>Essex WWT</u> <u>Essex Power Plant</u>
Weather Conditions for Past 10 days: <u>attached</u>	Permit Number(s): <u>MD0089273</u> <u>MD0123447</u>
Official Drought Conditions at time of this survey (search DNR home page for “drought”): No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Location:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site 01	Easting (UTM X): <u>1160245277</u>	Northing (UTM Y): <u>4072094</u>	Horizontal Accuracy: (EPE) FOM / PDOP <u>4</u> Meters
Site 11	Easting (UTM X): <u>11650245265</u>	Northing (UTM Y): <u>4071935</u>	Horizontal Accuracy: (EPE) FOM / PDOP <u>5</u> Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

Uses Observed*: (Uses actually observed at the time of survey.)

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use Data Sheet D- Recreational Use Interview when conducting interviews.)				

Stream Name & WBID # Ditch #6 3097
Site # 4

Date of Survey 10/8/08

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (Page 2 of 3)

Surrounding Conditions*: (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input checked="" type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input checked="" type="checkbox"/> Steep slopes	<input type="checkbox"/> Other:
Comments: <u>Farm fields</u>				

Evidence of Human Use*: (Attach photos and reference in "Photos" section.)

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV / ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock Watering
<input checked="" type="checkbox"/> None of the above	Comments / Other:			

Substrate*: (These values should add up to 100%.)

% Cobble	% Gravel	<u>20</u> % Sand	<u>10</u> % Silt	<u>70</u> % Mud/Clay	% Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

<u>None Dry</u>

Water Characteristics*: (Mark all that apply.)

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input type="checkbox"/> Other:
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input type="checkbox"/> None	<input type="checkbox"/> Other:

*This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions that need further analysis or that affect another use.

Stream Name & WBID # Ditch #6 3097Date of Survey 10/8/08Site # 4**Field Data Sheets for Recreational Use Stream Surveys****Data Sheet B – Site Characterization** (Page 3 of 3)**Additional Stream Morphology:** (Record isolated pools or other features identified during the survey that may support recreational uses.)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

Comments: (Please record any additional comments here.)

Dry - None

Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.

Printed Names of Personnel Collecting Data: Abigail Lynn & Travis HowellSurveyor's Signature: [Signature] Date of Survey: 10/8/08Organization: ERC Position: Field Manager

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: <u>Ditch # 6</u> Waterbody ID: <u>3097</u> Site #: <u>4</u>														Dissolved Oxygen							
Estimated Channel Incision: <u>Dry</u> (m) (height between low bank width and water)														Date: <u>10/8/2008</u> Time: <u>14:37</u>							
GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (<u>EPE</u> / PDOP / FOM)														Dissolved Oxygen: <u>Dry</u> (mg/L)							
01 UTM X <u>16S0245277</u> UTM Y: <u>4072094</u> +/- <u>4</u> (meters)														Dissolved Oxygen: <u>Dry</u> (% sat)							
11 UTM X <u>16S0245265</u> UTM Y: <u>4071935</u> +/- <u>5</u> (meters)														Specific Cond: <u>Dry</u> (µS/cm)							
Average Stream Width: <u>Dry</u> (meters) Length of Survey Segment: <u>150</u> (meters)														Water Temperature: <u>Dry</u> (°C)							
(To determine Length of Reach) (20x average stream width)																					
Field Staff: <u>Abby Lynn and Travis Howell (AL & TH)</u>																					
Transect Cross-Section																					
01		02		03		04		05		06		07		08		09		10		11	
Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right Bank		0		0		0		0		0		0		0		0		0		0	
Feature Type		Dry		Dry		Dry		Dry		Dry		Dry		Dry		Dry		Dry		Dry	

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.1 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Surveyor's Signature: Abigail L. Lynn Date: 10/8/2008

WBID # 3097
 Site # 5

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (Page 1 of 3) (must be completed for each site)

Date & Time: <u>10/8/08 14:20</u>	Location Description (e.g., road crossing): <u>Upstream at Hwy D</u>
Stream Name: <u>Ditch #6</u>	
Current Weather Conditions: <u>65° clear</u>	Facility Name(s): <u>Essex WWT</u> <u>Essex Power Plant</u>
Weather Conditions for Past 10 days: <u>attached</u>	Permit Number(s): <u>MO 0029273</u> <u>MO 0123447</u>
Official Drought Conditions at time of this survey (search DNR home page for “drought”): No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Location:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site 01	Easting (UTM X): <u>1620245176</u>	Northing (UTM Y): <u>4068825</u>	Horizontal Accuracy: (EPE / FOM / PDOP) <u>5</u> Meters
Site 11	Easting (UTM X): <u>1650245171</u>	Northing (UTM Y): <u>4068663</u>	Horizontal Accuracy: (EPE / FOM / PDOP) <u>8</u> Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

Uses Observed*: (Uses actually observed at the time of survey.)

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use Data Sheet D- Recreational Use Interview when conducting interviews.)				

Stream Name & WBID # Ditch # 6 3897Date of Survey 10/8/08Site # 5**Field Data Sheets for Recreational Use Stream Surveys****Data Sheet B – Site Characterization** (Page 2 of 3)**Surrounding Conditions*:** (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input checked="" type="checkbox"/> Steep slopes	<input type="checkbox"/> Other:
Comments: <u>Farm Fields</u>				

Evidence of Human Use*: (Attach photos and reference in "Photos" section.)

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV / ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock Watering
<input checked="" type="checkbox"/> None of the above	Comments / Other:			

Substrate*: (These values should add up to 100%.)

% Cobble	% Gravel	<u>70</u> % Sand	<u>10</u> % Silt	<u>20</u> % Mud/Clay	% Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

<u>None Dry</u>

Water Characteristics*: (Mark all that apply.)

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input type="checkbox"/> Other:
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input type="checkbox"/> None	<input type="checkbox"/> Other:

*This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions that need further analysis or that affect another use.

Stream Name & WBID # Ditch # 6 3097Date of Survey 10/8/08Site # 15**Field Data Sheets for Recreational Use Stream Surveys****Data Sheet B – Site Characterization** (Page 3 of 3)**Additional Stream Morphology:** (Record isolated pools or other features identified during the survey that may support recreational uses.)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

Comments: (Please record any additional comments here.)

None - Dry

Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.Printed Names of Personnel Collecting Data: Abigail L. Lynn + Travis HowellSurveyor's Signature: Abigail Lynn Date of Survey: 10/8/08Organization: ERC Position: Field Manager

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: <u>Ditch # 6</u> Waterbody ID: <u>3097</u> Site #: <u>5</u>														Dissolved Oxygen							
Estimated Channel Incision: <u>Dry</u> (m) (height between low bank width and water)														Date: <u>10/8/2008</u> Time: <u>14:20</u>							
GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (<u>EPE</u> / PDOP / FOM)														Dissolved Oxygen: <u>Dry</u> (mg/L)							
01 UTM X <u>16S0245176</u> UTM Y: <u>4068825</u> +/- <u>5</u> (meters)														Dissolved Oxygen: <u>Dry</u> (% sat)							
11 UTM X <u>16S0245171</u> UTM Y: <u>4068663</u> +/- <u>8</u> (meters)														Specific Cond: <u>Dry</u> (µS/cm)							
Average Stream Width: <u>Dry</u> (meters) Length of Survey Segment: <u>150</u> (meters)														Water Temperature: <u>Dry</u> (°C)							
(To determine Length of Reach) (20x average stream width)																					
Field Staff: <u>Abby Lynn and Travis Howell (AL & TH)</u>																					
Transect Cross-Section																					
01		02		03		04		05		06		07		08		09		10		11	
Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right Bank		0		0		0		0		0		0		0		0		0		0	
Feature Type		Dry		Dry		Dry		Dry		Dry		Dry		Dry		Dry		Dry		Dry	

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.1 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Surveyor's Signature: Abigail L. Lynn Date: 10/8/2008

WBID # 3097Site # 6**Field Data Sheets for Recreational Use Stream Surveys****Data Sheet B – Site Characterization** (Page 1 of 3)
(must be completed for each site)

Date & Time: <u>10/8/08 13:59</u>	Location Description (e.g., road crossing): <u>Upstream off Co Rd 760</u>
Stream Name: <u>Ditch #6</u>	
Current Weather Conditions: <u>60° clear</u>	Facility Name(s): <u>Essex WWTF</u> <u>Essex Power Plant</u>
Weather Conditions for Past 10 days: <u>attached</u>	Permit Number(s): <u>MO 0089273</u> <u>MO 0123447</u>
Official Drought Conditions at time of this survey (search DNR home page for "drought"): No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Location:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)					
Site 01	Easting (UTM X): <u>1650245105</u>	Northing (UTM Y): <u>4067202</u>	Horizontal Accuracy: (EPE / FOM / PDOP) <u>5</u>	Meters	
Site 11	Easting (UTM X): <u>1650245096</u>	Northing (UTM Y): <u>4067648</u>	Horizontal Accuracy: (EPE / FOM / PDOP) <u>4</u>	Meters	

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

Uses Observed*: (Uses actually observed at the time of survey.)

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use Data Sheet D- Recreational Use Interview when conducting interviews.)				

Stream Name & WBID # Ditch # 6 3097Date of Survey 10/8/08Site # 6**Field Data Sheets for Recreational Use Stream Surveys****Data Sheet B – Site Characterization** (Page 2 of 3)**Surrounding Conditions*:** (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input checked="" type="checkbox"/> Steep slopes	<input type="checkbox"/> Other:
Comments: <u>Farm Fields</u>				

Evidence of Human Use*: (Attach photos and reference in "Photos" section.)

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV / ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock Watering
<input checked="" type="checkbox"/> None of the above	Comments / Other:			

Substrate*: (These values should add up to 100%.)

% Cobble	% Gravel	<u>10</u> % Sand	<u>20</u> % Silt	<u>70</u> % Mud/Clay	% Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

<u>None Dry</u>

Water Characteristics*: (Mark all that apply.)

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input type="checkbox"/> Other:
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input type="checkbox"/> None	<input type="checkbox"/> Other:

*This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions that need further analysis or that affect another use.

Stream Name & WBID # Ditch #6 3097

Date of Survey 10/8/08

Site # 6

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (Page 3 of 3)

Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses.)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

Comments: (Please record any additional comments here.)

Dry

Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.

Printed Names of Personnel Collecting Data: Abigail Lynn + Travis Howell

Surveyor's Signature: Abigail Lynn Date of Survey: 10/8/08

Organization: ERC Position: Field Manager

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: <u>Ditch # 6</u> Waterbody ID: <u>3097</u> Site #: <u>6</u>														Dissolved Oxygen							
Estimated Channel Incision: <u>Dry</u> (m) (height between low bank width and water)														Date: <u>10/8/2008</u> Time: <u>13:59</u>							
GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (<u>EPE</u> / PDOP / FOM)														Dissolved Oxygen: <u>Dry</u> (mg/L)							
01 UTM X <u>16S0245105</u> UTM Y: <u>4067202</u> +/- <u>5</u> (meters)														Dissolved Oxygen: <u>Dry</u> (% sat)							
11 UTM X <u>16S0245096</u> UTM Y: <u>4067048</u> +/- <u>4</u> (meters)														Specific Cond: <u>Dry</u> (µS/cm)							
Average Stream Width: <u>Dry</u> (meters) Length of Survey Segment: <u>150</u> (meters)														Water Temperature: <u>Dry</u> (°C)							
(To determine Length of Reach) (20x average stream width)																					
Field Staff: <u>Abby Lynn and Travis Howell (AL & TH)</u>																					
Transect Cross-Section																					
01		02		03		04		05		06		07		08		09		10		11	
Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right Bank		0		0		0		0		0		0		0		0		0		0	
Feature Type		Dry		Dry		Dry		Dry		Dry		Dry		Dry		Dry		Dry		Dry	

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.1 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Surveyor's Signature: Abigail L. Lynn Date: 10/8/2008

WBID # 3097Site # 7**Field Data Sheets for Recreational Use Stream Surveys****Data Sheet B – Site Characterization** (Page 1 of 3)

(must be completed for each site)

Date & Time: <u>10-8-08 13:38</u>	Location Description (e.g., road crossing): <u>up stream off Co Rd 766</u>
Stream Name: <u>Ditch #6</u>	
Current Weather Conditions: <u>clr 65°</u>	Facility Name(s): <u>Essex WWTF</u> <u>Essex Power Plant</u>
Weather Conditions for Past 10 days: <u>attached</u>	Permit Number(s): <u>MD 0089273</u> <u>MD 0123447</u>
Official Drought Conditions at time of this survey (search DNR home page for "drought"): No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Location:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site 01	Easting (UTM X): <u>11650244728</u>	Northing (UTM Y): <u>4065379</u>	Horizontal Accuracy: (EPE / FOM / PDOP) <u>5</u> Meters
Site 11	Easting (UTM X): <u>11650244613</u>	Northing (UTM Y): <u>4065471</u>	Horizontal Accuracy: (EPE / FOM / PDOP) <u>5</u> Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

Uses Observed*: (Uses actually observed at the time of survey.)

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use Data Sheet D- Recreational Use Interview when conducting interviews.)				

Stream Name & WBID # Ditch #6 3097Date of Survey 10-8-08Site # 7**Field Data Sheets for Recreational Use Stream Surveys****Data Sheet B – Site Characterization** (Page 2 of 3)**Surrounding Conditions*:** (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input checked="" type="checkbox"/> Steep slopes	<input type="checkbox"/> Other:
Comments: <i>Farm Fields</i>				

Evidence of Human Use*: (Attach photos and reference in "Photos" section.)

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV / ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock Watering
<input checked="" type="checkbox"/> None of the above	Comments / Other:			

Substrate*: (These values should add up to 100%.)

% Cobble	% Gravel	% Sand	% Silt	<i>100</i> % Mud/Clay	% Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

<i>Algae mass, Long strands of filamentous algae</i>
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Water Characteristics*: (Mark all that apply.)

Odor:	<input checked="" type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input type="checkbox"/> Clear	<input checked="" type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input type="checkbox"/> Other:
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input type="checkbox"/> Fine sediments	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input checked="" type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input type="checkbox"/> None	<input type="checkbox"/> Other:

*This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions that need further analysis or that affect another use.

Stream Name & WBID # Ditch # 6 3097Date of Survey 10-8-08Site # 7**Field Data Sheets for Recreational Use Stream Surveys****Data Sheet B – Site Characterization** (Page 3 of 3)**Additional Stream Morphology:** (Record isolated pools or other features identified during the survey that may support recreational uses.)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

Comments: (Please record any additional comments here.)

None

Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.

Printed Names of Personnel Collecting Data: Abby Lyon & Travis R. HowellSurveyor's Signature: Travis R. Howell Date of Survey: 10-8-08Organization: ERC Position: Field Crew

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: <u>Ditch # 6</u> Waterbody ID: <u>3097</u> Site #: <u>7</u>														Dissolved Oxygen								
Estimated Channel Incision: <u>Dry</u> (m) (height between low bank width and water)														Date: <u>10/8/2008</u> Time: <u>13:38</u>								
GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (<u>EPE</u> / PDOP / FOM)														Dissolved Oxygen: <u>8.06</u> (mg/L)								
01 UTM X <u>16S0244728</u> UTM Y: <u>4065579</u> +/- <u>5</u> (meters)														Dissolved Oxygen: <u>86</u> (% sat)								
11 UTM X <u>16S0244613</u> UTM Y: <u>4065471</u> +/- <u>5</u> (meters)														Specific Cond: <u>191</u> (µS/cm)								
Average Stream Width: <u>3.5</u> (meters) Length of Survey Segment: <u>150</u> (meters)														Water Temperature: <u>19.3</u> (°C)								
(To determine Length of Reach) (20x average stream width)																						
Field Staff: <u>Abby Lynn and Travis Howell (AL & TH)</u>																						
Transect Cross-Section																						
01		02		03		04		05		06		07		08		09		10		11		
Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0.45	0.09	0.36	0.05	0.41	0.08	0.36	0.05	
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0.9	0.12	0.72	0.07	0.82	0.14	0.72	0.1	
3	0	0	0	0	0	0	0	0	0	0	0	0	0	1.35	0.12	1.08	0.12	1.23	0.19	1.08	0.12	
4	0	0	0	0	0	0	0	0	0	0	0	0	0	1.8	0.05	1.44	0.14	1.64	0.17	1.44	0.18	
5	0	0	0	0	0	0	0	0	0	0	0	0	0	2.25	0.05	1.8	0.12	2.05	0.19	1.8	0.22	
6	0	0	0	0	0	0	0	0	0	0	0	0	0	2.7	0.03	2.16	0.1	2.46	0.18	2.16	0.18	
7	0	0	0	0	0	0	0	0	0	0	0	0	0	3.15	0.07	2.52	0.11	2.87	0.18	2.52	0.17	
8	0	0	0	0	0	0	0	0	0	0	0	0	0	3.6	0.1	2.88	0.11	3.28	0.12	2.88	0.11	
9	0	0	0	0	0	0	0	0	0	0	0	0	0	4.05	0.08	3.24	0.1	3.69	0.09	3.24	0.08	
Right Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	4.5	0	3.6	0	4.1	0	3.6	0	
Feature Type	Dry		Dry		Dry		Dry		Dry		Dry		Dry		Run		Run		Run		Run	

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.1 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Surveyor's Signature: Abigail L. Lynn Date: 10/8/2008

WBID # 3097Site # 8**Field Data Sheets for Recreational Use Stream Surveys****Data Sheet B – Site Characterization** (Page 1 of 3)

(must be completed for each site)

Date & Time: <u>10/8/09 13:20</u>	Location Description (e.g., road crossing): <u>Co Rd 772 upstream</u>
Stream Name: <u>Ditch #16</u>	
Current Weather Conditions: <u>66° clear</u>	Facility Name(s): <u>Essex WWTF</u> <u>Essex Power Plant</u>
Weather Conditions for Past 10 days: <u>attached</u>	Permit Number(s): <u>MO 0089273</u> <u>MO 0123447</u>
Official Drought Conditions at time of this survey (search DNR home page for "drought"): No drought <input checked="" type="checkbox"/> Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Location:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)					
Site 01	Easting (UTM X): <u>1650244182</u>	Northing (UTM Y): <u>4064077</u>	Horizontal Accuracy: <u>5</u> Meters (EPE / FOM / PDOP)		
Site 11	Easting (UTM X): <u>1650244181</u>	Northing (UTM Y): <u>4063918</u>	Horizontal Accuracy: <u>8</u> Meters (EPE / FOM / PDOP)		

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

Uses Observed*: (Uses actually observed at the time of survey.)

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use Data Sheet D- Recreational Use Interview when conducting interviews.)				

Stream Name & WBID # Ditch #6 3097Date of Survey 10/8/08Site # 8**Field Data Sheets for Recreational Use Stream Surveys****Data Sheet B – Site Characterization** (Page 2 of 3)**Surrounding Conditions*:** (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input checked="" type="checkbox"/> Steep slopes	<input type="checkbox"/> Other:
Comments: <u>Farm Fields</u>				

Evidence of Human Use*: (Attach photos and reference in "Photos" section.)

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV / ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock Watering
<input checked="" type="checkbox"/> None of the above	Comments / Other:			

Substrate*: (These values should add up to 100%.)

% Cobble	% Gravel	<u>10</u> % Sand	<u>20</u> % Silt	<u>70</u> % Mud/Clay	% Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

<u>None Dry</u>

Water Characteristics*: (Mark all that apply.)

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input type="checkbox"/> Other:
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input type="checkbox"/> None	<input type="checkbox"/> Other:

*This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions that need further analysis or that affect another use.

Stream Name & WBID # Ditch #6 3097Date of Survey 10/8/08Site # 8**Field Data Sheets for Recreational Use Stream Surveys****Data Sheet B – Site Characterization** (Page 3 of 3)**Additional Stream Morphology:** (Record isolated pools or other features identified during the survey that may support recreational uses.)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

Comments: (Please record any additional comments here.)

Dry - none

Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.Printed Names of Personnel Collecting Data: Allyson Lipun & Travis HowellSurveyor's Signature: Allyson Lipun Date of Survey: 10/8/08Organization: ERC Position: Field Manager

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: <u>Ditch # 6</u> Waterbody ID: <u>3097</u> Site #: <u>8</u>														Dissolved Oxygen							
Estimated Channel Incision: <u>Dry</u> (m) (height between low bank width and water)														Date: <u>10/8/2008</u> Time: <u>13:20</u>							
GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (<u>EPE</u> / PDOP / FOM)														Dissolved Oxygen: <u>Dry</u> (mg/L)							
01 UTM X <u>16S0244182</u> UTM Y: <u>4064077</u> +/- <u>5</u> (meters)														Dissolved Oxygen: <u>Dry</u> (% sat)							
11 UTM X <u>16S0244181</u> UTM Y: <u>4063918</u> +/- <u>8</u> (meters)														Specific Cond: <u>Dry</u> (µS/cm)							
Average Stream Width: <u>Dry</u> (meters) Length of Survey Segment: <u>150</u> (meters)														Water Temperature: <u>Dry</u> (°C)							
(To determine Length of Reach) (20x average stream width)																					
Field Staff: <u>Abby Lynn and Travis Howell (AL & TH)</u>																					
Transect Cross-Section																					
01		02		03		04		05		06		07		08		09		10		11	
Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right Bank		0		0		0		0		0		0		0		0		0		0	
Feature Type		Dry		Dry		Dry		Dry		Dry		Dry		Dry		Dry		Dry		Dry	

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.1 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Surveyor's Signature: Abigail L. Lynn Date: 10/8/2008

WBID # 3097Site # 9**Field Data Sheets for Recreational Use Stream Surveys****Data Sheet B – Site Characterization** (Page 1 of 3)

(must be completed for each site)

Date & Time: <u>10/8/08 12:59</u>	Location Description (e.g., road crossing): <u>Hwy 2 Downstream</u>
Stream Name: <u>Ditch #6</u>	
Current Weather Conditions: <u>65° clear</u>	Facility Name(s): <u>Essex WWTF</u> <u>Essex Power Plant</u>
Weather Conditions for Past 10 days: <u>attached</u>	Permit Number(s): <u>MO 0089273</u> <u>MO 0123447</u>
Official Drought Conditions at time of this survey (search DNR home page for "drought"): No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Location:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)					
Site 01	Easting (UTM X): <u>1650244038</u>	Northing (UTM Y): <u>40602254</u>	Horizontal Accuracy: (EPE / FOM / PDOP) <u>5</u>	Meters	
Site 11	Easting (UTM X): <u>1650244049</u>	Northing (UTM Y): <u>40602093</u>	Horizontal Accuracy: (EPE / FOM / PDOP) <u>4</u>	Meters	

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

Uses Observed*: (Uses actually observed at the time of survey.)

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use Data Sheet D- Recreational Use Interview when conducting interviews.)				

Stream Name & WBID # Ditch # 6 3097
Site # 9

Date of Survey 10/8/08

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (Page 2 of 3)

Surrounding Conditions*: (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Steep slopes	<input type="checkbox"/> Other:
Comments: <u>Farm fields</u>				

Evidence of Human Use*: (Attach photos and reference in "Photos" section.)

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV / ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock Watering
<input checked="" type="checkbox"/> None of the above	Comments / Other:			

Substrate*: (These values should add up to 100%.)

% Cobble	% Gravel	<u>10</u> % Sand	<u>20</u> % Silt	<u>70</u> % Mud/Clay	% Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

<u>algae in pool</u>

Water Characteristics*: (Mark all that apply.)

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input type="checkbox"/> Clear	<input checked="" type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input type="checkbox"/> Other:
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input checked="" type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input type="checkbox"/> None	<input type="checkbox"/> Other:

*This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions that need further analysis or that affect another use.

Stream Name & WBID # Ditch #6 3697Date of Survey 10/8/08Site # 9**Field Data Sheets for Recreational Use Stream Surveys****Data Sheet B – Site Characterization** (Page 3 of 3)**Additional Stream Morphology:** (Record isolated pools or other features identified during the survey that may support recreational uses.)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

Comments: (Please record any additional comments here.)

None - mostly dry

Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.

Printed Names of Personnel Collecting Data: Abigail Lynn + Travis HowellSurveyor's Signature: Augusta Johnson Date of Survey: 10/8/08Organization: ERC Position: Field Manager

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: <u>Ditch # 6</u> Waterbody ID: <u>3097</u> Site #: <u>9</u>														Dissolved Oxygen							
Estimated Channel Incision: <u>Dry</u> (m) (height between low bank width and water)														Date: <u>10/8/2008</u> Time: <u>12:59</u>							
GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (<u>EPE</u> / PDOP / FOM)														Dissolved Oxygen: <u>Dry</u> (mg/L)							
01 UTM X <u>16S0244058</u> UTM Y: <u>4062254</u> +/- <u>5</u> (meters)														Dissolved Oxygen: <u>Dry</u> (% sat)							
11 UTM X <u>16S0244049</u> UTM Y: <u>4062093</u> +/- <u>4</u> (meters)														Specific Cond: <u>Dry</u> (µS/cm)							
Average Stream Width: <u>Dry</u> (meters) Length of Survey Segment: <u>150</u> (meters)														Water Temperature: <u>Dry</u> (°C)							
(To determine Length of Reach) (20x average stream width)																					
Field Staff: <u>Abby Lynn and Travis Howell (AL & TH)</u>																					
Transect Cross-Section																					
01		02		03		04		05		06		07		08		09		10		11	
Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0	0.18	0.03	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0.36	0.05	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0.54	0.06	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0.72	0.08	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0.9	0.08	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	0	1.08	0.08	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	0	1.26	0.07	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	0	1.44	0.04	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	0	1.62	0.04	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right Bank		0	0	1.8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feature Type		Dry		Pool		Dry		Dry		Dry		Dry		Dry		Dry		Dry		Dry	

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.1 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Surveyor's Signature: Abigail L. Lynn Date: 10/8/2008

WBID # 3097Site # 10**Field Data Sheets for Recreational Use Stream Surveys****Data Sheet B – Site Characterization** (Page 1 of 3)

(must be completed for each site)

Date & Time: <u>10/2/08 16:01</u>	Location Description (e.g., road crossing): <u>Upstream at Co Rd 780</u>
Stream Name: <u>Pitch #6</u>	
Current Weather Conditions: <u>76° clear</u>	Facility Name(s): <u>Essex WWTF</u> <u>Essex Power plant</u>
Weather Conditions for Past 10 days: <u>attached</u>	Permit Number(s): <u>MO 0089273</u> <u>MO 0123447</u>
Official Drought Conditions at time of this survey (search DNR home page for "drought"): No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Location:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)					
Site 01	Easting (UTM X): <u>1650243988</u>	Northing (UTM Y): <u>4060787</u>	Horizontal Accuracy: (EPE / FOM / PDOP) <u>5</u>	Meters	
Site 11	Easting (UTM X): <u>1650243981</u>	Northing (UTM Y): <u>4060615</u>	Horizontal Accuracy: (EPE / FOM / PDOP) <u>6</u>	Meters	

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
<u>262</u>	<u>Transect 11</u> <u>Upstream</u>	<u>263</u>	<u>Transect 1</u> <u>Downstream</u>		
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

Uses Observed*: (Uses actually observed at the time of survey.)

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use Data Sheet D- Recreational Use Interview when conducting interviews.)				

Stream Name & WBID # Ditch #6 3097Date of Survey 10/2/08Site # 10**Field Data Sheets for Recreational Use Stream Surveys****Data Sheet B – Site Characterization** (Page 2 of 3)**Surrounding Conditions*:** (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Steep slopes	<input type="checkbox"/> Other:
Comments: <u>Farm Fields</u>				

Evidence of Human Use*: (Attach photos and reference in "Photos" section.)

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV / ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock Watering
<input checked="" type="checkbox"/> None of the above	Comments / Other:			

Substrate*: (These values should add up to 100%.)

% Cobble	% Gravel	<u>25</u> % Sand	<u>25</u> % Silt	<u>50</u> % Mud/Clay	% Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

<u>40-50% Filamentous algae</u>

Water Characteristics*: (Mark all that apply.)

Odor:	<input checked="" type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input checked="" type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input type="checkbox"/> Other:
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input checked="" type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input type="checkbox"/> None	<input type="checkbox"/> Other:

*This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions that need further analysis or that affect another use.

Stream Name & WBID # Ditch #6 3097
Site # 10

Date of Survey 10/2/08

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (Page 3 of 3)

Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses.)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

Comments: (Please record any additional comments here.)

None

Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.

Printed Names of Personnel Collecting Data: Abby Lynn + Travis Howell

Surveyor's Signature: Abby Lynn Date of Survey: 10/2/08

Organization: ERC Position: Field Manager

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: <u>Ditch # 6</u> Waterbody ID: <u>3097</u> Site #: <u>10</u>														Dissolved Oxygen								
Estimated Channel Incision: <u>0.5</u> (m) (height between low bank width and water)														Date: <u>10/2/2008</u> Time: <u>16:01</u>								
GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM)														Dissolved Oxygen: <u>8.82</u> (mg/L)								
01 UTM X <u>16S0243988</u> UTM Y: <u>4060787</u> +/- <u>5</u> (meters)														Dissolved Oxygen: <u>91.4</u> (% sat)								
11 UTM X <u>16S0243981</u> UTM Y: <u>4060615</u> +/- <u>6</u> (meters)														Specific Cond: <u>242.6</u> (µS/cm)								
Average Stream Width: <u>4.5</u> (meters) Length of Survey Segment: <u>150</u> (meters)														Water Temperature: <u>16.7</u> (°C)								
(To determine Length of Reach) (20x average stream width)																						
Field Staff: <u>Abby Lynn and Travis Howell (AL & TH)</u>																						
Transect Cross-Section																						
01		02		03		04		05		06		07		08		09		10		11		
Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1	0	0.13	0.02	0.31	0.02	0.16	0.09	0.48	0.09	0.45	0.1	0.5	0.13	0.47	0.13	0.53	0.1	0.49	0.05	0.52	0.13	
2	0	0.26	0.04	0.62	0.04	0.32	0.21	0.96	0.18	0.9	0.16	1	0.12	0.94	0.19	1.06	0.15	0.98	0.05	1.04	0.24	
3	0	0.39	0.06	0.93	0.03	0.48	0.23	1.44	0.22	1.35	0.15	1.5	0.14	1.41	0.2	1.59	0.18	1.47	0.06	1.56	0.25	
4	0	0.52	0.07	1.24	0.05	0.64	0.25	1.92	0.21	1.8	0.15	2	0.15	1.88	0.21	2.12	0.2	1.96	0.05	2.08	0.31	
5	0	0.65	0.04	1.55	0.07	0.8	0.25	2.4	0.23	2.25	0.17	2.5	0.15	2.35	0.19	2.65	0.22	2.45	0.04	2.6	0.3	
6	0	0.78	0.05	1.86	0.07	0.96	0.24	2.88	0.23	2.7	0.19	3	0.13	2.82	0.18	3.18	0.17	2.94	0.02	3.12	0.2	
7	0	0.91	0.06	2.17	0.07	1.12	0.19	3.36	0.21	3.15	0.2	3.5	0.13	3.29	0.16	3.71	0.15	3.43	0.02	3.64	0.17	
8	0	1.04	0.05	2.48	0.08	1.28	0.15	3.84	0.2	3.6	0.18	4	0.09	3.76	0.15	4.24	0.13	3.92	0.05	4.16	0.15	
9	0	1.17	0.04	2.79	0.05	1.44	0.11	4.32	0.17	4.05	0.14	4.5	0.06	4.23	0.11	4.77	0.09	4.41	0.11	4.68	0.12	
Right Bank	0	0	1.3	0	3.1	0	1.6	0	4.8	0	4.5	0	5	0	4.7	0	5.3	0	4.9	0	5.2	0
Feature Type	Dry		Run		Run		Run		Run		Run		Run		Run		Run		Run		Run	

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.1 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Surveyor's Signature: Abigail L. Lynn Date: 10/2/2008

WBID # 3097Site # 11**Field Data Sheets for Recreational Use Stream Surveys****Data Sheet B – Site Characterization** (Page 1 of 3)

(must be completed for each site)

Date & Time: <u>10/2/08 15:28</u>	Location Description (e.g., road crossing): <u>Downstream at Co Rd 784</u>
Stream Name: <u>Ditch #6</u>	
Current Weather Conditions: <u>76° clear</u>	Facility Name(s): <u>Essex WWTF</u> <u>Essex Power Plant</u>
Weather Conditions for Past 10 days: <u>attached</u>	Permit Number(s): <u>M00029273</u> <u>M00123447</u>
Official Drought Conditions at time of this survey (search DNR home page for "drought"): No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Location:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)					
Site 01	Easting (UTM X): <u>1650243914</u>	Northing (UTM Y): <u>4058991</u>	Horizontal Accuracy: (EPE / FOM / PDOP) <u>6</u>	Meters	
Site 11	Easting (UTM X): <u>1650243910</u>	Northing (UTM Y): <u>4058836</u>	Horizontal Accuracy: (EPE / FOM / PDOP) <u>8</u>	Meters	

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
<u>260</u>	<u>Transect I downstream</u>	<u>261</u>	<u>Transect II upstream</u>		
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

Uses Observed*: (Uses actually observed at the time of survey.)

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use Data Sheet D- Recreational Use Interview when conducting interviews.)				

Stream Name & WBID # Ditch #6 3097
 Site # 11

Date of Survey 10/2/08

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (Page 2 of 3)

Surrounding Conditions*: (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input checked="" type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Steep slopes	<input type="checkbox"/> Other:
Comments: <u>farm fields</u>				

Evidence of Human Use*: (Attach photos and reference in "Photos" section.)

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV / ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock Watering
<input checked="" type="checkbox"/> None of the above	Comments / Other:			

Substrate*: (These values should add up to 100%.)

% Cobble	% Gravel	<u>25</u> % Sand	<u>25</u> % Silt	<u>50</u> % Mud/Clay	% Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

<u>40-50% long strands of filamentous algae</u> <u>large mats of algae</u>

Water Characteristics*: (Mark all that apply.)

Odor:	<input checked="" type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input checked="" type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input type="checkbox"/> Other:
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input checked="" type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input type="checkbox"/> None	<input type="checkbox"/> Other:

*This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions that need further analysis or that affect another use.

Stream Name & WBID # Ditch #6 3097
Site # 11

Date of Survey 10/2/08

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (Page 3 of 3)

Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses.)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

Comments: (Please record any additional comments here.)

None

Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.

Printed Names of Personnel Collecting Data: Abby Lynn & Travis Howell

Surveyor's Signature: *Abigail Rhynan* Date of Survey: 10/2/08

Organization: ERC Position: Field Manager

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: <u>Ditch # 6</u> Waterbody ID: <u>3097</u> Site #: <u>11</u>																Dissolved Oxygen						
Estimated Channel Incision: <u>0.3</u> (m) (height between low bank width and water)																Date: <u>10/2/2008</u> Time: <u>15:28</u>						
GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (<u>EPE</u> / PDOP / FOM)																Dissolved Oxygen: <u>14.59</u> (mg/L)						
01 UTM X <u>16S0243917</u> UTM Y: <u>4058991</u> +/- <u>6</u> (meters)																Dissolved Oxygen: <u>181.4</u> (% sat)						
11 UTM X <u>16S0243910</u> UTM Y: <u>4058836</u> +/- <u>8</u> (meters)																Specific Cond: <u>233</u> (µS/cm)						
Average Stream Width: <u>6</u> (meters) Length of Survey Segment: <u>150</u> (meters)																Water Temperature: <u>25</u> (°C)						
(To determine Length of Reach) (20x average stream width)																						
Field Staff: <u>Abby Lynn and Travis Howell (AL & TH)</u>																						
Transect Cross-Section																						
01		02		03		04		05		06		07		08		09		10		11		
Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1	0.73	0.15	0.62	0.09	0.5	0.13	0.52	0.06	0.61	0.11	0.5	0.1	0.52	0.15	0.49	0.13	0.53	0.17	0.51	0.13	0.52	0.17
2	1.46	0.24	1.24	0.12	1	0.11	1.04	0.23	1.22	0.12	1	0.24	1.04	0.13	0.98	0.14	1.06	0.19	1.02	0.18	1.04	0.2
3	2.19	0.29	1.86	0.1	1.5	0.08	1.56	0.25	1.83	0.12	1.5	0.23	1.56	0.1	1.47	0.13	1.59	0.19	1.53	0.17	1.56	0.19
4	2.92	0.34	2.48	0.11	2	0.03	2.08	0.21	2.44	0.09	2	0.18	2.08	0.1	1.96	0.1	2.12	0.18	2.04	0.13	2.08	0.17
5	3.65	0.29	3.1	0.1	2.5	0.07	2.6	0.23	3.05	0.11	2.5	0.16	2.6	0.1	2.45	0.12	2.65	0.18	2.55	0.1	2.6	0.17
6	4.38	0.31	3.72	0.09	3	0.1	3.12	0.25	3.66	0.22	3	0.17	3.12	0.05	2.94	0.16	3.18	0.21	3.06	0.1	3.12	0.19
7	5.11	0.31	4.34	0.14	3.5	0.11	3.64	0.25	4.27	0.2	3.5	0.17	3.64	0.02	3.43	0.2	3.71	0.22	3.57	0.13	3.64	0.18
8	5.84	0.19	4.96	0.11	4	0.12	4.16	0.21	4.88	0.15	4	0.17	4.16	0.04	3.92	0.15	4.24	0.21	4.08	0.14	4.16	0.15
9	6.57	0.1	5.58	0.08	4.5	0.06	4.68	0.14	5.49	0.14	4.5	0.12	4.68	0.09	4.41	0.08	4.77	0.16	4.59	0.12	4.68	0.09
Right Bank	7.3	0	6.2	0	5	0	5.2	0	6.1	0	5	0	5.2	0	4.9	0	5.3	0	5.1	0	5.2	0
Feature Type	Run		Run		Run		Run		Run		Run		Run		Run		Run		Run		Run	
(riffle, run, or pool)																						

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.1 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Surveyor's Signature: Abigail L. Lynn Date: 10/2/2008

WBID # 3097Site # 12**Field Data Sheets for Recreational Use Stream Surveys****Data Sheet B – Site Characterization** (Page 1 of 3)

(must be completed for each site)

Date & Time: <u>10/2/08 15:07</u>	Location Description (e.g., road crossing): <u>Downstream off Co Rd 792</u>
Stream Name: <u>Ditch #6</u>	
Current Weather Conditions: <u>76° clear</u>	Facility Name(s): <u>Essex WWTP</u> <u>Essex Power Plant</u>
Weather Conditions for Past 10 days: <u>attached</u>	Permit Number(s): <u>MO 0089273</u> <u>MO 0123447</u>
Official Drought Conditions at time of this survey (search DNR home page for "drought"): No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Location:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site 01	Easting (UTM X): <u>1650243837</u>	Northing (UTM Y): <u>4057381</u>	Horizontal Accuracy: <u>6</u> Meters (EPE / FOM / PDOP)
Site 11	Easting (UTM X): <u>1650243838</u>	Northing (UTM Y): <u>4057228</u>	Horizontal Accuracy: <u>5</u> Meters (EPE / FOM / PDOP)

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
<u>258</u>	<u>Transect 1 Downstream</u>	<u>259</u>	<u>Transect 1/ Upstream</u>		
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

Uses Observed*: (Uses actually observed at the time of survey.)

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use Data Sheet D- Recreational Use Interview when conducting interviews.)				

Stream Name & WBID # Ditch # 6 3097Date of Survey 10/2/08Site # 12**Field Data Sheets for Recreational Use Stream Surveys****Data Sheet B – Site Characterization** (Page 2 of 3)**Surrounding Conditions*:** (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Steep slopes	<input type="checkbox"/> Other:
Comments: <u>Farm Fields</u>				

Evidence of Human Use*: (Attach photos and reference in "Photos" section.)

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV / ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock Watering
<input checked="" type="checkbox"/> None of the above	Comments / Other:			

Substrate*: (These values should add up to 100%.)

% Cobble	% Gravel	<u>20</u> % Sand	<u>20</u> % Silt	<u>60</u> % Mud/Clay	% Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

<u>Long strands of filamentous algae</u>
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Water Characteristics*: (Mark all that apply.)

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input checked="" type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input type="checkbox"/> Other:
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

*This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions that need further analysis or that affect another use.

Stream Name & WBID # Ditch #6 3097Date of Survey 10/2/08Site # 12**Field Data Sheets for Recreational Use Stream Surveys****Data Sheet B – Site Characterization** (Page 3 of 3)**Additional Stream Morphology:** (Record isolated pools or other features identified during the survey that may support recreational uses.)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

Comments: (Please record any additional comments here.)None**Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.**Printed Names of Personnel Collecting Data: Abby Lynn + Travis HowellSurveyor's Signature: Abby Lynn Date of Survey: 10/2/08Organization: ERC Position: Field Manager

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: <u>Ditch # 6</u> Waterbody ID: <u>3097</u> Site #: <u>12</u>																Dissolved Oxygen						
Estimated Channel Incision: <u>0.3</u> (m) (height between low bank width and water)																Date: <u>10/2/2008</u> Time: <u>15:07</u>						
GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (<u>EPE</u> / PDOP / FOM)																Dissolved Oxygen: <u>15.4</u> (mg/L)						
01 UTM X <u>16S0243837</u> UTM Y: <u>4057381</u> +/- <u>6</u> (meters)																Dissolved Oxygen: <u>194</u> (% sat)						
11 UTM X <u>16S0243838</u> UTM Y: <u>4057228</u> +/- <u>5</u> (meters)																Specific Cond: <u>205</u> (µS/cm)						
Average Stream Width: <u>5.5</u> (meters) Length of Survey Segment: <u>150</u> (meters)																Water Temperature: <u>26.1</u> (°C)						
(To determine Length of Reach) (20x average stream width)																						
Field Staff: <u>Abby Lynn and Travis Howell (AL & TH)</u>																						
Transect Cross-Section																						
01		02		03		04		05		06		07		08		09		10		11		
Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.51	0.07	0	0	0.59	0.1	
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.02	0.12	0	0	1.18	0.12	
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.53	0.1	0	0	1.77	0.12	
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2.04	0.11	0	0	2.36	0.11	
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2.55	0.11	0	0	2.95	0.09	
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3.06	0.08	0	0	3.54	0.08	
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3.57	0.11	0	0	4.13	0.11	
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4.08	0.06	0	0	4.72	0.14	
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4.59	0.03	0	0	5.31	0.13	
Right Bank		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5.1	0	0	0	5.9	0
Feature Type		Dry		Dry		Dry		Dry		Dry		Dry		Dry		Pool		Dry		Pool		

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.1 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Surveyor's Signature: Abigail L. Lynn Date: 10/2/2008

WBID # 3097
 Site # 13

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (Page 1 of 3)

(must be completed for each site)

Date & Time: <u>10/2/08 14:51</u>	Location Description (e.g., road crossing): <u>Downstream at Hwy D</u>
Stream Name: <u>Ditch #6</u>	Facility Name(s): <u>Essex WWTF</u> <u>Essex Power Plant</u>
Current Weather Conditions: <u>76° clear</u>	Permit Number(s): <u>MD0089273</u> <u>MD0123447</u>
Weather Conditions for Past 10 days: <u>attached</u>	
Official Drought Conditions at time of this survey (search DNR home page for "drought"): No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Location:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site 01	Easting (UTM X): <u>1650243780</u>	Northing (UTM Y): <u>4055795</u>	Horizontal Accuracy: (EPE / FOM / PDOP) <u>5</u> Meters
Site 11	Easting (UTM X): <u>1650243779</u>	Northing (UTM Y): <u>4055640</u>	Horizontal Accuracy: (EPE / FOM / PDOP) <u>5</u> Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
<u>256</u>	<u>Transect 1 Downstream</u>	<u>257</u>	<u>Transect 11 Upstream</u>		
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

Uses Observed*: (Uses actually observed at the time of survey.)

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use Data Sheet D- Recreational Use Interview when conducting interviews.)				

Stream Name & WBID # Ditch #6 3097
Site # 13

Date of Survey 10/2/08

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (Page 2 of 3)

Surrounding Conditions*: (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Steep slopes	<input type="checkbox"/> Other:
Comments: <u>Hwy + Farm Fields</u>				

Evidence of Human Use*: (Attach photos and reference in "Photos" section.)

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV / ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock Watering
<input checked="" type="checkbox"/> None of the above	Comments / Other:			

Substrate*: (These values should add up to 100%.)

% Cobble	% Gravel	<u>40</u> % Sand	<u>20</u> % Silt	<u>40</u> % Mud/Clay	% Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

<u>None</u>

Water Characteristics*: (Mark all that apply.)

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input type="checkbox"/> Other:
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input type="checkbox"/> None	<input type="checkbox"/> Other:

*This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions that need further analysis or that affect another use.

Stream Name & WBID # Ditch #6 3097
Site # 13

Date of Survey 10/2/08

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (Page 3 of 3)

Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses.)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

Comments: (Please record any additional comments here.)

Dry - None

Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.

Printed Names of Personnel Collecting Data: Abby Lyon & Travis Howell

Surveyor's Signature: August R. Lyon Date of Survey: 10/2/08

Organization: ERC Position: Field Manager

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: <u>Ditch # 6</u> Waterbody ID: <u>3097</u> Site #: <u>13</u>														Dissolved Oxygen							
Estimated Channel Incision: <u>Dry</u> (m) (height between low bank width and water)														Date: <u>10/2/2008</u> Time: <u>14:51</u>							
GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (<u>EPE</u> / PDOP / FOM)														Dissolved Oxygen: <u>Dry</u> (mg/L)							
01 UTM X <u>16S0234780</u> UTM Y: <u>4055795</u> +/- <u>5</u> (meters)														Dissolved Oxygen: <u>Dry</u> (% sat)							
11 UTM X <u>16S0243779</u> UTM Y: <u>4055640</u> +/- <u>5</u> (meters)														Specific Cond: <u>Dry</u> (µS/cm)							
Average Stream Width: <u>Dry</u> (meters) Length of Survey Segment: <u>150</u> (meters)														Water Temperature: <u>Dry</u> (°C)							
(To determine Length of Reach) (20x average stream width)																					
Field Staff: <u>Abby Lynn and Travis Howell (AL & TH)</u>																					
Transect Cross-Section																					
01		02		03		04		05		06		07		08		09		10		11	
Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right Bank		0		0		0		0		0		0		0		0		0		0	
Feature Type		Dry		Dry		Dry		Dry		Dry		Dry		Dry		Dry		Dry		Dry	

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.1 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Surveyor's Signature: Abigail L. Lynn Date: 10/2/2008













